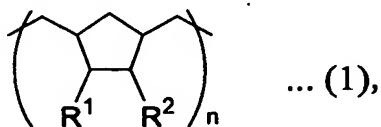
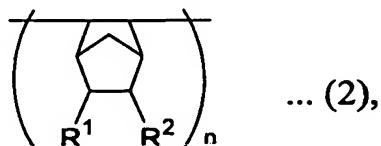


CLAIMS

1. A method for producing a substrate having a crystalline Si layer comprising the steps of forming an amorphous Si layer on a plastic substrate, and irradiating said amorphous Si layer with a laser beam to crystallize said amorphous Si, wherein said plastic substrate has light transmittance of 30 to 100% at an oscillation wavelength of said laser beam.
- 5 2. The method of claim 1 for producing a substrate having a crystalline Si layer, wherein said amorphous Si layer has a thickness of 1 to 10 2000 nm.
3. The method of claim 1 or 2 for producing a substrate having a crystalline Si layer, wherein the oscillation wavelength of said laser beam is 140 to 450 nm.
4. The method of any one of claims 1 to 3 for producing a substrate 15 having a crystalline Si layer, wherein said laser is an excimer laser.
5. The method of any one of claims 1 to 4 for producing a substrate having a crystalline Si layer, wherein said plastic substrate is made of amorphous polyolefin or polyethersulfone.
6. The method of any one of claims 1 to 5 for producing a substrate 20 having a crystalline Si layer, wherein said plastic substrate is made of a cycloolefin polymer represented by the following general formula (1):



or by the following general formula (2):



- 25 wherein R¹ and R² independently represent a hydrogen atom, a nonpolar

• group, a halogen atom, a hydroxyl group, an ester group, an alkoxy group, a cyano group, an amide group, an imide group or a silyl group; n represents an integer of 1 to 100,000; and R¹ and R² may be connected to each other to form a mono- or poly-cyclic ring, provided that R¹ and R² do not form a 5-membered, unsubstituted, saturated, monocyclic hydrocarbon.

5 7. A substrate having a crystalline Si layer produced by the method recited in any one of claims 1 to 6.

10 8. The substrate of claim 7 having a crystalline Si layer, wherein said plastic substrate is provided with an insulating thin film having a thickness of 10 nm to 10 µm on at least one surface.

9. A crystalline Si device comprising the substrate of claim 7 or 8 having a crystalline Si layer.